

# Claims

- [c1] 1. A method of managing operational risk for an organization, the method comprising:
  - identifying at least one failure mode for a function of the organization;
  - identifying at least one cause and at least one effect for at least one of the at least one failure mode;
  - acquiring ratings associated with the at least one cause and the at least one effect;
  - permuting the at least one failure mode, the at least one cause, and the at least one effect to define at least two risk items; and
  - producing a risk prioritization report of the at least two risk items based at least in part on the ratings associated with the at least one cause and the at least one effect.
- [c2] 2. The method of claim 1 further comprising:
  - recording a mitigation plan associated with at least one of the at least two risk items in the risk prioritization report; and
  - tracking implementation of the mitigation plan.
- [c3] 3. The method of claim 1 wherein the ratings further comprise:

a severity rating and a response rating associated with each of the at least one effect; and an occurrence rating and a detection rating associated with each of the at least one cause.

- [c4] 4. The method of claim 3 wherein the producing of the risk prioritization report further comprises:
  - calculating a criticality based on the severity rating and the occurrence rating;
  - calculating a risk priority number based on the severity rating, the occurrence rating and the detection rating;
  - and
  - calculating an adjusted criticality based on the criticality, the severity rating, and the response rating.
- [c5] 5. The method of claim 4 further comprising:
  - determining whether the at least one effect is related to at least one of a group consisting of compliance and strategic planning;
  - wherein the producing of the risk prioritization report further comprises determining whether each of the at least two risk items represents at least one of a group consisting of a compliance related risk, a strategic planning related risk, a hidden factory, and a tail event.
- [c6] 6. The method of claim 2 wherein the ratings further comprise:

a severity rating and a response rating associated with each of the at least one effect; and an occurrence rating and a detection rating associated with each of the at least one cause.

- [c7] 7. The method of claim 6 wherein the producing of the risk prioritization report further comprises:
  - calculating a criticality based on the severity rating and the occurrence rating;
  - calculating a risk priority number based on the severity rating, the occurrence rating and the detection rating;
  - and
  - calculating an adjusted criticality based on the criticality, the severity rating, and the response rating.
- [c8] 8. The method of claim 7 further comprising:
  - determining whether the at least one effect is related to at least one of a group consisting of compliance and strategic planning;
  - wherein the producing of the risk prioritization report further comprises determining whether each of the at least two risk items represents at least one of a group consisting of a compliance related risk, a strategic planning related risk, a hidden factory, and a tail event.
- [c9] 9. The method of claim 1 further comprising:
  - acquiring failure mode likelihoods associated with the at

least one failure mode for the function; and  
validating the ratings using the failure mode likelihoods.

- [c10] 10. The method of claim 2 further comprising:  
acquiring failure mode likelihoods associated with the at  
least one failure mode for the function; and  
validating the ratings using the failure mode likelihoods.
- [c11] 11. The method of claim 3 further comprising:  
acquiring failure mode likelihoods associated with the at  
least one failure mode for the function; and  
validating the ratings using the failure mode likelihoods.
- [c12] 12. The method of claim 6 further comprising:  
acquiring failure mode likelihoods associated with the at  
least one failure mode for the function; and  
validating the ratings using the failure mode likelihoods.
- [c13] 13. The method of claim 1 further comprising validating  
the ratings using historical data.
- [c14] 14. The method of claim 3 further comprising validating  
the ratings using historical data.
- [c15] 15. The method of claim 6 further comprising validating  
the ratings using historical data.
- [c16] 16. The method of claim 12 further comprising validat-  
ing the ratings using historical data.

- [c17] 17. The method of claim 1 wherein the producing of the risk prioritization report further comprises quantifying at least some of the risk items based on financial data.
- [c18] 18. The method of claim 5 wherein the producing of the risk prioritization report further comprises quantifying at least some of the risk items based on financial data.
- [c19] 19. The method of claim 8 wherein the producing of the risk prioritization report further comprises quantifying at least some of the risk items based on financial data.
- [c20] 20. The method of claim 12 wherein the producing of the risk prioritization report further comprises quantifying at least some of the risk items based on financial data.
- [c21] 21. The method of claim 1 further comprising determining a stability ratio, wherein the stability ratio represents a comparison of one of a number of priority risk items and a number of non-priority risk items to a total number of risk items.
- [c22] 22. The method of claim 2 wherein the method further comprises determining a stability ratio, wherein the stability ratio represents a comparison of one of a number of priority risk items and a number of non-priority risk

items to a total number of risk items and the tracking of the implementation of the mitigation plan further comprises tracking a stability ratio.

- [c23] 23. A computer program product comprising a computer program for facilitating risk assessment and control for an organization, the computer program comprising:
  - instructions for identifying failure modes for at least one function of the organization;
  - instructions for identifying at least one cause and at least one effect for each failure mode;
  - instructions for acquiring ratings associated with the at least one cause and the at least one effect;
  - instructions for permuting the failure modes, the at least one cause, and the at least one effect to define risk items; and
  - instructions for producing a risk prioritization report of the risk items based at least in part on the ratings associated with the at least one cause and the at least one effect for each failure mode.
- [c24] 24. The computer program product of claim 23 wherein the computer program further comprises:
  - instructions for recording a mitigation plan associated with at least one of the risk items in the risk prioritization report; and
  - instructions for tracking implementation of the mitigation plan.

tion plan.

- [c25] 25. The computer program product of claim 23 wherein the ratings further comprise:
  - a severity rating and a response rating associated with each of the at least one effect; and
  - an occurrence rating and a detection rating associated with each of the at least one cause.
- [c26] 26. The computer program product of claim 25 wherein the instructions for producing the risk prioritization report further comprise:
  - instructions for calculating a criticality based on the severity rating and the occurrence rating;
  - instructions for calculating a risk priority number based on the severity rating, the occurrence rating and the detection rating; and
  - instructions for calculating an adjusted criticality based on the criticality, the severity rating, and the response rating.
- [c27] 27. The computer program product of claim 26 wherein the computer program further comprises:
  - instructions for determining whether the at least one effect is related to at least one of a group consisting of compliance and strategic planning;
  - wherein the instructions for producing of the risk priori-

ization report further comprise instructions for determining whether each of the risk items represents at least one of a group consisting of a compliance related risk, a strategic planning related risk, a hidden factory, and a tail event.

- [c28] 28. The computer program product of claim 24 wherein the ratings further comprise:
  - a severity rating and a response rating associated with each of the at least one effect; and
  - an occurrence rating and a detection rating associated with each of the at least one cause.
- [c29] 29. The computer program product of claim 28 wherein the instructions for producing the risk prioritization report further comprises:
  - instructions for calculating a criticality based on the severity rating and the occurrence rating;
  - instructions for calculating a risk priority number based on the severity rating, the occurrence rating and the detection rating; and
  - instructions for calculating an adjusted criticality based on the criticality, the severity rating, and the response rating.
- [c30] 30. The computer program product of claim 29 wherein the computer program further comprises:

instructions for determining whether the at least one effect is related to at least one of a group consisting of compliance and strategic planning; wherein the instructions for producing of the risk prioritization report further comprise instructions for determining whether each of the risk items represents at least one of a group consisting of a compliance related risk, a strategic planning related risk, a hidden factory, and a tail event.

- [c31] 31. The computer program product of claim 23 wherein the computer program further comprises:  
instructions for acquiring failure mode likelihoods associated with the at least one failure mode for the function;  
and  
instructions for validating the ratings using the failure mode likelihoods.
- [c32] 32. The computer program product of claim 24 wherein the computer program further comprises:  
instructions for acquiring failure mode likelihoods associated with the at least one failure mode for the function;  
and  
instructions for validating the ratings using the failure mode likelihoods.
- [c33] 33. The computer program product of claim 25 wherein

the computer program further comprises:  
instructions for acquiring failure mode likelihoods associated with the at least one failure mode for the function;  
and  
instructions for validating the ratings using the failure mode likelihoods.

- [c34] 34. The computer program product of claim 28 wherein the computer program further comprises:  
instructions for acquiring failure mode likelihoods associated with the at least one failure mode for the function;  
and  
instructions for validating the ratings using the failure mode likelihoods.
- [c35] 35. The computer program product of claim 23 wherein the computer program further comprises instructions for validating the ratings using historical data.
- [c36] 36. The computer program product of claim 25 wherein the computer program further comprises instructions for validating the ratings using historical data.
- [c37] 37. The computer program product of claim 28 wherein the computer program further comprises instructions for validating the ratings using historical data.
- [c38] 38. The computer program product of claim 34 wherein

the computer program further comprises instructions for validating the ratings using historical data.

- [c39] 39. The computer program product of claim 23 wherein the instructions for producing the risk prioritization report further comprise instructions for quantifying at least some of the risk items based on financial data.
- [c40] 40. The computer program product of claim 27 wherein the instructions for producing the risk prioritization report further comprise instructions for quantifying at least some of the risk items based on financial data.
- [c41] 41. The computer program product of claim 30 wherein the instructions for producing the risk prioritization report further comprise instructions for quantifying at least some of the risk items based on financial data.
- [c42] 42. The computer program product of claim 34 wherein the instructions for producing the risk prioritization report further comprise instructions for quantifying at least some of the risk items based on financial data.
- [c43] 43. The computer program product of claim 23 wherein the computer program further comprises instructions for determining a stability ratio, wherein the stability ratio represents a comparison of one of a number of priority risk items and a number of non-priority risk items to a

total number of risk items.

- [c44] 44. The computer program product of claim 24 wherein the computer program further comprises instructions for determining a stability ratio, wherein the stability ratio represents a comparison of one of a number of priority risk items and a number of non-priority risk items to a total number of risk items and the instructions for tracking the implementation of the mitigation plan further comprise instructions for tracking a stability ratio.
- [c45] 45. Apparatus for facilitating risk management for an organization, the apparatus comprising:
  - means for identifying failure modes for at least one function of the organization;
  - means for identifying at least one cause and at least one effect for each failure mode;
  - means for acquiring ratings associated with the at least one cause and the at least one effect;
  - means for permuting the failure modes, the at least one cause, and the at least one effect to define risk items;
  - and
  - means for producing a risk prioritization report of the risk items based at least in part on the ratings associated with the at least one cause and the at least one effect for each failure mode.

- [c46] 46. The apparatus of claim 45 further comprising:
  - means for recording a mitigation plan associated with at least one of the risk items in the risk prioritization report; and
  - means for tracking implementation of the mitigation plan.
- [c47] 47. The apparatus of claim 45 further comprising:
  - means for acquiring failure mode likelihoods associated with the at least one failure mode for the function; and
  - means for validating the ratings using the failure mode likelihoods.
- [c48] 48. The apparatus of claim 46 further comprising:
  - means for acquiring failure mode likelihoods associated with the at least one failure mode for the function; and
  - means for validating the ratings using the failure mode likelihoods.
- [c49] 49. The apparatus of claim 45 further comprising means for validating the ratings using historical data.
- [c50] 50. The apparatus of claim 46 further comprising means for validating the ratings using historical data.
- [c51] 51. The apparatus of claim 47 further comprising means for validating the ratings using historical data.

- [c52] 52. The apparatus of claim 48 further comprising means for validating the ratings using historical data.
- [c53] 53. The apparatus of claim 45 further comprising means for determining a stability ratio, wherein the stability ratio represents a comparison of one or a number of priority risk items and a number of non-priority risk items to a total number of risk items.
- [c54] 54. A system for facilitating risk assessment and control for an organization comprising:
  - at least one analysis module to identify causes and effects associated with failure modes of at least one function of the organization and acquire ratings associated with the causes and effects;
  - at least one data store operationally connected to at least some of the at least one analysis module to store failure modes, causes, effects, and ratings; and
  - at least one calculation module operationally connected to the at least one data store to permute the failure modes, causes and effect to define risk items and produce a risk prioritization report of the risk items based at least in part on the ratings.
- [c55] 55. The system of claim 54 wherein the ratings further comprise:
  - a severity rating and a response rating associated with

each effect; and

an occurrence rating and a detection rating associated with each cause.

- [c56] 56. The system of claim 55 wherein the at least one calculation module is operable to calculate a criticality based on the severity rating and the occurrence rating, a risk priority number based on the severity rating, the occurrence rating and the detection rating, and an adjusted criticality based on the criticality, the severity rating, and the response rating.
- [c57] 57. The system of claim 56 wherein the at least one calculation module is operable to determine whether each of the risk items represents at least one of a group consisting of a compliance related risk, a strategic planning related risk, a hidden factory, and a tail event.
- [c58] 58. The system of claim 54 further comprising a data validation module operationally connected to the at least one data store, the data validation module operable to validate ratings at least in part using historical data.
- [c59] 59. The system of claim 54 further comprising a risk data quantification module operationally connected to the at least one data store, the risk data quantification module operable to quantify ratings based at least in

part on financial data.

- [c60] 60. The system of claim 55 further comprising a data validation module operationally connected to the at least one data store, the data validation module operable to validate ratings at least in part using historical data.
- [c61] 61. The system of claim 55 further comprising a risk data quantification module operationally connected to the at least one data store, the risk data quantification module operable to quantify ratings based at least in part on financial data.
- [c62] 62. The system of claim 56 further comprising a data validation module operationally connected to the at least one data store, the data validation module operable to validate ratings at least in part using historical data.
- [c63] 63. The system of claim 56 further comprising a risk data quantification module operationally connected to the at least one data store, the risk data quantification module operable to quantify ratings based at least in part on financial data.
- [c64] 64. The system of claim 57 further comprising a data validation module operationally connected to the at least one data store, the data validation module operable to validate ratings at least in part using historical data.

- [c65] 65. The system of claim 57 further comprising a risk data quantification module operationally connected to the at least one data store, the risk data quantification module operable to quantify ratings based at least in part on financial data.
- [c66] 66. The system of claim 54 further comprising an operational interface to a risk meta-modeling system.
- [c67] 67. The system of claim 58 further comprising an operational interface to a risk meta-modeling system.
- [c68] 68. The system of claim 59 further comprising an operational interface to a risk meta-modeling system.
- [c69] 69. The system of claim 62 further comprising an operational interface to a risk meta-modeling system.
- [c70] 70. The system of claim 63 further comprising an operational interface to a risk meta-modeling system.
- [c71] 71. The system of claim 54 further comprising a stability analysis module operationally connected to the at least one calculation module to determine a stability ratio, wherein the stability ratio represents a comparison of one of a number of priority risk items and a number of non-priority risk items to a total number of risk items.